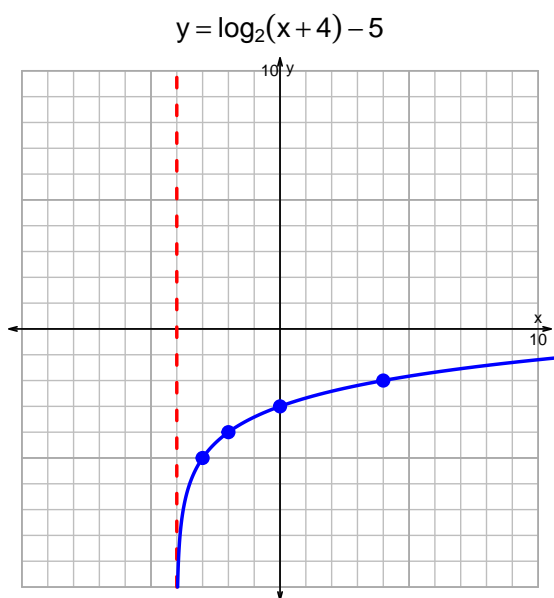
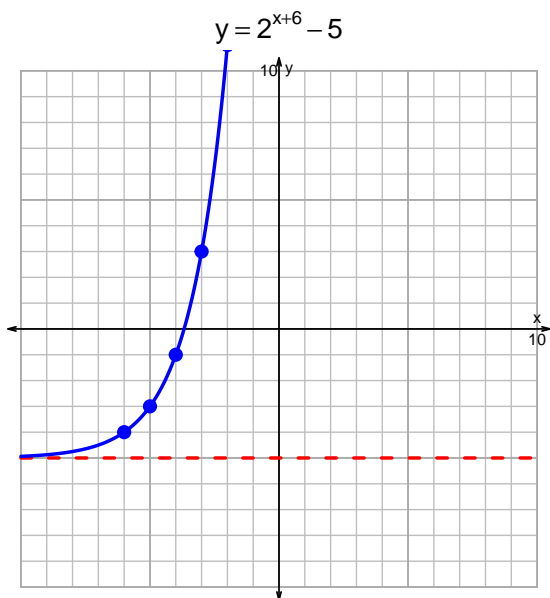


Name: _____

Date: _____

s18QUIZ: EXP LOG (SLTN v210)

1. Graph $y = 2^{x+6} - 5$ and $y = \log_2(x + 4) - 5$ on the grids below. Also, draw any asymptotes with dotted lines.



2. Write (but do not evaluate) the solution to the equation below by writing a logarithmic expression.

$$23 = \left(\frac{4}{7}\right) \cdot 2^{3t/5}$$

Divide both sides by $\frac{4}{7}$.

$$\frac{23 \cdot 7}{4} = 2^{3t/5}$$

Take log, base 2, of both sides.

$$\log_2 \left(\frac{23 \cdot 7}{4} \right) = \frac{3t}{5}$$

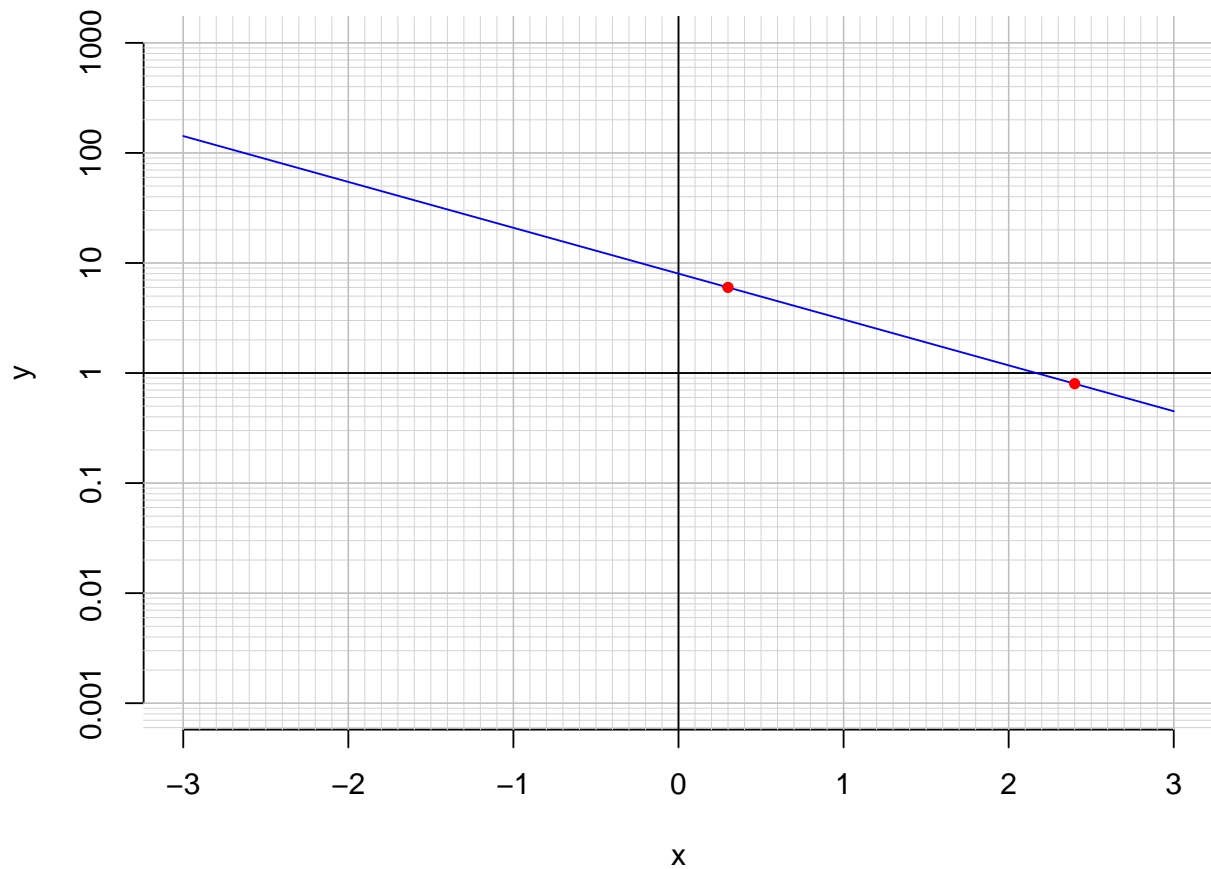
Divide both sides by $\frac{3}{5}$.

$$\frac{5}{3} \cdot \log_2 \left(\frac{23 \cdot 7}{4} \right) = t$$

Switch sides.

$$t = \frac{5}{3} \cdot \log_2 \left(\frac{23 \cdot 7}{4} \right)$$

3. An exponential function $f(x) = 8 \cdot e^{-0.959x}$ is graphed below on a semi-log plot.



- a. Using the plot above, evaluate $f(2.4)$.

$$f(2.4) = 0.8$$

- b. Express $f^{-1}(x)$, the inverse of f .

$$f^{-1}(x) = \frac{-1}{0.959} \cdot \ln\left(\frac{x}{8}\right)$$

- c. Using the plot above, evaluate $f^{-1}(6)$.

$$f^{-1}(6) = 0.3$$